REMARKS / ARGUMENTS

Status of Claims

Claims 1-24 are pending in the application and stand rejected. Applicant has amended Claims 1, 3, 4, 11, 13, 14, 18, 20 and 21, leaving Claims 1-24 for consideration upon entry of the present Amendment.

Applicant respectfully submits that the rejections under 35 U.S.C. §112, second paragraph, 35 U.S.C. §102(b), and 35 U.S.C. §103(a), have been traversed, that no new matter has been entered, and that the application is in condition for allowance.

Rejections Under 35 U.S.C. §112, Second Paragraph

Claims 3, 10, 13, 17, 20 and 24 stand rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The Examiner comments that the recitation "said penetration thermally isolated from said coldhead" is unclear in that the penetration 230 is still indirectly cooled by the coldhead.

Applicant traverses this rejection for the following reasons.

Applicant has amended claims 3, 13, and 20, from which claims 10, 17 and 24 depend, to recite "said penetration ~~thermally isolated~~remote from said coldhead so as to provide direct thermal isolation therefrom" to particularly point out and distinctly claim the subject matter Applicants regard as the invention. No new matter has been added since this language makes explicit what was previously implicit as suggested by the Examiner.

In view of the foregoing, Applicants respectfully submits that claims 3, 10, 13, 17, 20 and 24 comply with the requirements of 35 U.S.C. §112, second paragraph, and therefore respectfully requests reconsideration and withdrawal of this rejection.

Rejections Under 35 U.S.C. §102(b)

Claims 1-4, 10-14, 17-21 and 24 stand rejected under 35 U.S.C. §102(b) as being anticipated by Longsworth (U.S. Patent No. 4,223,540, hereinafter "Longsworth").

Applicant traverses this rejection for the following reasons.

Applicant respectfully submits that "[a] claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, ***in a single prior art reference***." *Verdegaal Bros. V. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987) (Emphasis added). Moreover, "[t]he identical invention must be shown in as complete detail as is contained in the *** claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). Furthermore, the single source must disclose all of the claimed elements "***arranged as in the claim***." Structural Rubber Prods. Co. v. Park Rubber Co., 749 F.2d 707, 716, 223 U.S.P.Q. 1264, 1271 (Fed. Cir. 1984) (Emphasis added). Missing elements may not be supplied by the knowledge of one skilled in the art or the disclosure of another reference. Titanium Metals Corp. v. Banner, 778 F.2d 775, 780, 227 U.S.P.Q. 773, 777 (Fed. Cir. 1985).

Applicant has canceled Claims 4-6 and has amended independent Claims 1, 11 and 18 to include language from Claims 4, 14 and 21, respectively, to recite, *inter alia*,

"...and wherein sensible heat from said boiloff of cryogen gas cools down ~~at least one of~~ a coldhead sleeve of said coldhead, said penetration, **and** said first **and** second thermal shields."

Dependent claims inherit all of the limitations of the respective parent claim.

Here, Applicants claim that sensible heat from said boiloff of cryogen gas cools down (1) a coldhead sleeve of said coldhead, (2) said penetration, **and** said (3) first **and** (4) second thermal shields.

In rejecting the independent claims, the Examiner alleges that Longsworth discloses that sensible heat from said boiloff of cryogen gas cools down at least one of a coldhead sleeve (34) of said coldhead, but does not state with any particularity that

Longsworth also discloses the sensible heat cooling said penetration and/or the first and second thermal shields.

In fact, Longsworth teaches away from the sensible heat from the boiloff of cryogen gas cooling down said penetration and said first and second thermal shields. In particular, Longsworth discloses "that the horizontal heat stations (64,66,65,67) in both neck tubes 39,34 respectively serve to establish the temperature in the helium gas. They also help **block thermal radiation** in the neck tube. **Radiation and convective thermal losses** in the neck tubes 24,34 may be further reduced by packing the neck tubes with a foam or glass fiber type insulation (not shown)." (Emphasis added.) Column 4, lines 50-56.

In view of the foregoing, Applicants submit that Longsworth does not disclose all of the claimed elements arranged as in the claim, and absent anticipatory disclosure in Longsworth of each and every element of the claimed invention arranged as in the claim, Longsworth cannot be anticipatory.

In particular, it is respectfully submitted that Longsworth does not teach or suggest, and in fact teaches away from, wherein sensible heat from said boiloff of cryogen gas cools down a coldhead sleeve of said coldhead, said penetration and said first and second thermal shields, as in amended independent claim 1 and similarly claimed in independent claims 11 and 18. Thus, claims 1, 11 and 18, including claims depending therefrom, i.e., claims 2-10, 12-17 and 19-24, define over Longsworth.

In light of the foregoing amendments and remarks, Applicants submit that Longsworth does not disclose each and ***every element of the claimed invention arranged as claimed*** and therefore cannot be anticipatory. Accordingly, Applicant respectfully submits that the Examiner's rejection under 35 U.S.C. §102(b) has been traversed, and requests that the Examiner reconsider and withdraw of this rejection.

Rejections Under 35 U.S.C. §103(a)

Claims 5-9, 15, 16, 22 and 23 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Longsworth in view of Sugimoto (U.S. Patent No. 5,132,618, hereinafter "Sugimoto").

Applicant traverses this rejection for the following reasons.

Applicant respectfully submits that the obviousness rejection based on the References is improper as the References fail to teach or suggest ***each and every element of the instant invention so as to perform as the claimed invention performs***. For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a prima facie case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). The Examiner must meet the burden of establishing that all elements of the invention are taught or suggested in the prior art. MPEP §2143.03.

Claims 5-9 depend from Claim 1, Claims 15 and 16 depend from Claim 11 and claims 22 and 23 depend from claim 18, either directly or indirectly, all of which claims 1, 11 and 18 are submitted as being allowable for defining over Longsworth as discussed above. Accordingly, and for at least these reasons, Applicant submits that Claims 5-9, 15, 16, 22 and 23 are allowable over Longsworth, that Sugimoto fails to cure the deficiencies of Longsworth, and therefore that Claims 5-9, 15, 16, 22 and 23 are allowable over Longsworth in view of Sugimoto.

In view of the foregoing, Applicant submits that the References fail to teach or suggest each and every element of the claimed invention and are therefore wholly inadequate in their teaching of the claimed invention as a whole, fail to motivate one skilled in the art to do what the patent Applicant has done, fail to offer any reasonable expectation of success in combining the References to perform as the claimed invention performs, and discloses a substantially different invention from the claimed invention, and therefore cannot properly be used to establish a prima facie case of obviousness. Accordingly, Applicant respectfully requests reconsideration and withdrawal of all rejections under 35 U.S.C. §103(a), which Applicant considers to be traversed.

In light of the forgoing, Applicant respectfully submits that the Examiner's rejections under 35 U.S.C. 35 U.S.C. §112, second paragraph, 35 U.S.C. §102(b), and 35 U.S.C. §103(a), have been traversed, and respectfully requests that the Examiner reconsider and withdraw these rejections.

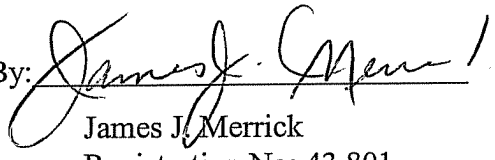
The Commissioner is hereby authorized to charge any additional fees that may be required for this amendment, or credit any overpayment, to Deposit Account No. 50-2513.

In the event that an extension of time is required, or may be required in addition to that requested in a petition for extension of time, the Commissioner is requested to grant a petition for that extension of time that is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to the above identified Deposit Account.

Respectfully submitted,

CANTOR COLBURN LLP

Applicant's Attorneys

By: 

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